

SDMS US EPA REGION V -1

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156429

Monsanto

CORPORATE ENGINEERING DEPARTMENT

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Phone: (314) 884-1000

October 15, 1984

→ 1 yr plus

J. S. Alberici Company
2150 Kienlein Avenue
St. Louis, MO 63121

Attention Mr. C. J. Lotz

REFERENCE CEA 3808, Main South Trunk Sewer - Sauget, IL

Gentlemen

This is to confirm our discussions about acceptance of Vittrified Clay Pipe (VCP) for the above project. During our trip to Dickey Clay Pipe we talked about allowing certain chips and small cracks on the spigots of the pipe. The quality of the VCP was excellent and there were very few pipes unacceptable. Because of this, and due to the fact that some short pieces are required which can be cut from the full lengths and will be acceptable, we intend to require the full intent of the specifications and allow no chips, fractures or cracks in the pipe.

To confirm what was said to the Dickey personnel, we intend that the project specifications be followed. Specifically, that all pipe be hydrostatically tested and that the spigots as well as the sockets be scored. Scoring on the spigot of fired pieces may be done mechanically. Three grooves of 1/8" minimum depth will be acceptable.

Please transmit this information to your supplier. If there are any questions, please contact me.

Sincerely


Kenneth W. Lichtenheid, CS6G

mb

cc Fred A. Mayse, CS6G
→ R. Nelson, 1740

Why are we now
willing to compromise
our specifications



WGK 4084474

Masonry / Sheppard

c resins, or gunned ceramic material.
type material) with or without a resin

e glass reinforced plastic, rigid
d paper or other fibre.

vered by ASTM specification C700
rd and Extra Strength. For normal
ngth is usually adequate. Where the
inage or industrial waste, the extra
ugh salt-glazed pipe may be used for
ould be employed without exception
employed primarily in gravity lines,
ed for heads of 5' and sometimes 10',
e system backing up due to blockage
if wastes.

r clay as written, permit absorption
of 10 psi, varying from seven minutes
ites for 36" to 42" diameters, which
running liquid as their definition of
ification as written will not provide a
ce as specified is usually satisfactory.
t the clay from which the pipe are
strong caustic, and that pipe of this
tes that are expected to run for any
12.

types of wastes, this type of pipe is
sanitary wastes "allowable leakages"
lons per inch of diameter per mile of
figure have been noted to as little as
rement that the system be totally
wastes at this time a leak-free line is
ecifications and test methods shown
the higher allowable leakages for
oured asphalt joints or hot poured
acking" of oiled jute or "oakum,"
ds as covered in ASTM C-425, a
ertain types of slip on mechanical

id Proof Joints in Terra Cotta Industrial
er, 1975, vol. 122, No. 12, pp. 64-67.

Chemically Resistant Masonry / Sheppard

closures. A major problem with sanitary sewers is root penetration, since tree roots will seek out and penetrate any leaking joint in order to take advantage of the fertilizing effect of the sewage. Sulfur mortars and some treated joint materials have the advantage of being root resistant. For industrial wastes, hot poured sulfur joints backing a caulked packing of asbestos fibre, used either alone or in conjunction with a resin mortar, is the usual type of joint.

When the allowable leakage is reduced to the lowest figure, or where none at all is permitted, these specifications will not provide an acceptable line. The inadequacy of the absorption and pressure requirements have been pointed out above. In addition, chips and cracks in bells and spigots are permitted within specified limits, as are also some cracks in the barrels. If the pipe line is to be liquid-tight, there can be no cracks, and certainly both ends must be free of chips and cracks.

A study of out-of-round tolerances and the permissible variances in length of opposite sides of the same section of pipe will make it clear that mechanical and pre-formed joints can never meet a no-leak requirement. Neither can either the Portland cement-sand packing nor the hot poured sulfur joints alone since both shrink to some degree in cure and have measurable absorption, and both will sweat after the joint becomes saturated. Since asphalt has cold flow, any continuous pressure will eventually rupture it, though sanitary lines are more subject to infiltration than exfiltration. A combination of properly selected and tightly installed fibrous packing and resinous mortar, backed and held in place either by hot sulfur or a nearly non-absorbant and non-shrinking material such as in the epoxy resin mortar, is so far the only way to insure a liquid-tight joint. A sketch shows how this may be installed. Should the pipe be broken or should the joint leak under test, it may be sealed by "armoring," that is, wrapping with at least three counter-wound fibre glass cloth bandages, saturated with epoxy resin mortar, each cured separately and held in place until cured with a large "C" clamp. The detailed method of accomplishing this will be found in the appendix.

Clay pipe are brittle and great care should be exercised in the installation if a liquid-tight line is to be obtained. Installation follows ASTM specification C-12. For the handling of industrial wastes and leak-free lines, it is recommended that all pipe be continuously supported by a concrete pad or by saddles, especially if there is any chance of movement of the soil, and that pipe under 12" in diameter, if at all possible, be encased in concrete up to the spring line. Concrete cover or other adequate protection from crushing and vibration must be